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(54) Title: INTEGRATED PORATION, HARVESTING AND ANALYSIS DEVICE, AND METHOD THEREFOR

(57) Abstract

An integrated device for poration of biological tissue, harvesting a biological fluid from the tissue, and analysis of the biological fluid. The device comprises a tissue-contacting layer having an electrically or optically heated probe to heat and conduct heat to the tissue to form at least one opening, such as a micropore to collect biological fluid from the opening, and a detecting layer responsive to the biological fluid to provide an indication of a characteristic of the biological fluid, such as the concentration of an analyte in interstitial fluid. In the embodiment in which, the probe comprises a photosensitizing assembly designed for the uniform application of a photosensitizing material, such as, for example, a dye or a pigment, to a tissue, e.g., the stratum corneum. In one embodiment, the photosensitizing assembly comprises photosensitizing material combined with a carrier, such as, for example, an adhesive or an ink, and the resulting combination is applied to a substrate, such as, for example, an inert polymeric substrate to form a photosensitizing assembly. In another embodiment, the photosensitizing assembly comprises photosensitizing material incorporated into a film-forming polymeric material.